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February 16, 2012

Nancy Rumrill
Groundwater Office Representative, Region 9
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105

Re: *Curis's Florence Copper Project – January Exceedance Notice*

Dear Ms. Rumrill:

As you are aware, our client Southwest Value Partners is part of a large group of Pinal County landowners and residents opposed to Curis's proposed mine, in part, because is was not proven safe by BHP pilot testing in the 1990s. In fact, we have highlighted a number of post-pilot test exceedances demonstrated in area monitor wells. Our concerns have been validated once again by the most recent exceedance reported in just January of this year. Curis's recent water quality monitoring data from P49-O—a monitoring well perforated in the oxide bedrock zone into which BHP injected acidic solution—demonstrates significant exceedances of alert levels for sulfate, magnesium, and total dissolved solids.

Attached to this letter is our hydrogeologist's technical analysis of Curis's recently reported exceedances at P49-O. This analysis refutes Curis's attempts to dismiss these exceedances as somehow anomalous in nature and highlights the significance of these results as related to the previous in-situ pilot operations. Exceedances of the magnitude reported by Curis in wells expressly designated to monitor groundwater conditions resulting from the previous pilot test are certainly relevant and in fact, give us great concern. For the reasons explained in more detail within this letter and the attached technical memorandum, we urge you to require Curis to conduct monthly monitoring and to investigate the source of these contaminants.

Because of these alarming results, Curis should not only conduct monthly monitoring but should also investigate the source of these contaminants. We believe that the only explanation for these high contaminant levels is the previous in-situ pilot project's injection of acidic solution. We know of no change in area conditions that would explain these results and Curis has offered no such explanation. Furthermore, these results may indicate that past mining activities had impacts on the aquifer that are only now coming to light. If so, this would support our position that mining often has long-term impacts that only become apparent years later.

These incredibly high sulfate levels also are cause for extreme concern given the impact of sulfate contamination on sensitive populations (for example, young children and the elderly). As you know, ADEQ imposed narrative standards at the Sierrita Mine near Green Valley that are 20 percent of the levels seen here (250 mg/l). That was done, in part, to prevent sulfate contamination from affecting the health of sensitive populations downgradient. The surrounding communities in Florence deserve similar protection from mining impacts.

These results provide additional support for the concerns we have already expressed to you – namely that the BHP Pilot Test did no more than raise additional concerns about the proposed mine's ability to control its acidic solution. If the short-term pilot test could not contain acidic solution then additional pilot operations and full-scale mining would be so much worse and should not be permitted. In the meantime, we urge you to require additional sampling and investigation of these exceedances and to withhold any further action on Curis's permit application until these results are explained and steps are taken to prevent future impacts.

Sincerely,

Janis L. Bladine

Enclosures (2)
cc: Maria Baier, ASLD
Chris Thomas, Squire Sanders (Johnson Utilities)
Paul Gilbert, Beus Gilbert
Justin Merritt, SWVP
David Albright, Manager, USEPA, Region 9

MEMORANDUM

February 15, 2012

To: Justin B. Merritt, Southwest Value Partners

From: Stephen D. Noel, R.G., Kevin Hebert, R.G., Southwest Ground-water Consultants, Inc.

Subject: INFORMATION PERTAINING TO THE ALERT LEVEL EXCEEDANCE FOR SULFATE - CURIS RESOURCES, INC. UNDERGROUND INJECTION CONTROL PERMIT NO. AZ396000001

Southwest Ground-water Consultants, Inc. (SGC) has prepared the following discussion regarding the recent alert level (AL) exceedance of sulfate reported by Curis Resources, Inc. (Curis) in their 5-day notification report to the EPA dated January 23, 2012. This summary is provided to highlight the magnitude and potential significance of this exceedance, and to refute the explanations provided by Curis in their report.

As part of a required quarterly monitoring program, Curis collected a sample from monitor well P49-O on December 5, 2011. Review of the laboratory results indicated that the established ALs for magnesium (Mg), total dissolved solids (TDS), and sulfate (SO_4) were significantly exceeded during that sampling event. Curis collected a follow sample from well P49-O on January 4, 2012 and the previous results were confirmed. The results of those analyses, as well as the mean values of 16 rounds of sampling previously conducted at this well are shown in the following table.

P49-O Ground-water Monitoring Results

Sample Date	Magnesium (mg/L)	Sulfate (mg/L)	Fluoride (mg/L)	TDS (mg/L)
1996-1998[1]	3.6[2]	102[2]	0.95[2]	472[2]
12/5/11	**15**	**1,280**	NI[3]	**2,000**
01/4/12	**15**	**1,320**	<0.4	**2,000**
Alert Level	6.2	181	1.9	801

1996-1998[1] = 12 samples were collected in 1996 and four samples were collected from 1997 to 1998.
3.6[2] = Results shown are mean values of the 16 sample results collected from 1996-1998.
NI[3] = Data not included.
Bold = Result is greater than the established Alert Level.

Results of initial sampling (12 rounds) conducted at this well in 1996 prior to the in-situ pilot test, and sampling conducted in 1997 and 1998 show concentrations of sulfate, magnesium, and TDS that are orders of magnitude less than the results shown above. It was these values that

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Prescott, Arizona

were used to determine the AL for the indicator parameters. The mean concentration of sulfate from those sampling events (102 mg/L) is ***roughly 13 times less*** than the confirmation sampling result recently measured. A copy of a data table summarizing the laboratory results of the previous sampling is included as Attachment 1.

A review of information pertaining to well P49-O indicates that the well is perforated exclusively within the oxide zone. P49-O is located near the southwest corner of the in-situ copper recovery (ISCR) area, which is also where the steep contact between the lower basin fill unit (LBFU) and oxide zone exists. A figure showing the location of well P49-O is included in Attachment 2. Diagrams and other information relating to the design, construction, and lithology of and encountered in well P49-O are included in Attachment 3.

Curis attempts to dismiss the AL exceedances as not being related to the previous pilot test and recommends that no further action be taken. A brief summary of Curis' explanations and our response is provided below.

- *"Under prevailing conditions, P49-O is a cross-gradient, background well to the pilot test area. Since the facility is inactive, the increased concentrations are not believed to be related to permitted mining operations. The remaining indicator parameter, fluoride, decreased significantly, which is counter-indicative of an impact"*

A ground-water contour map prepared by Brown and Caldwell for October 2008 shows well P49-O located in a relatively down gradient location from the pilot test area. This information, as well as knowledge that the Oxide zone is highly fractured does not dispel the notion that the AL exceedances could not have been related to the permitted mining operations. A copy of the contour map for October 2008 is included in Attachment 2.

Secondly, pre-pilot tests for fluoride ranged from 0.29 to 1.3 mg/L (Attachment 1). The most current analysis (confirmation sample) shows a non-detect level of <0.4 mg/L. This result can hardly be described as a significant decrease.

- *"The increases in concentrations in P49-O appear to be an affect of the low flow sampling methodology. The low-flow pump may be collecting the water sample from a distinct portion of the aquifer zone with higher concentrations which become diluted performing a typical three borehole volume purge. The concentrations are in fact similar to the ranges observed in nearby well M24-O for pre-mining, ambient conditions. Since the observed changes in concentrations are not believed to be related to the permitted activities, we believe no further action is required.*

It is difficult to believe that the type of pumping system could affect a change as drastic as is being shown here, which would in essence ***negate all*** of the ground-water data collected historically for the site. If Curis believes this point, they should re-sample the well under the exact conditions as the pre-pilot test for comparison purposes. In addition, Curis should be required to perform discrete, zone specific sampling throughout the perforated interval of the well to investigate where the high sulfate concentrations are emanating.

The Curis attempt to make a comparison of these data to the data collected at well M24-O is also not valid. Well M24-O is located approximately 1,200 feet away from P49-O and is apparently perforated in a different geologic unit because data for this well are used to prepare contours for the lower basin fill unit as opposed to the oxide zone (see the figure provided in Attachment 2). It is also disingenuous for Curis to claim that the higher concentrations detected in well M24-O

are representative of *"pre-mining, ambient conditions"* since we know that this area is directly down gradient of the underground mining shafts and cross cuts from the historical mining activities that occurred in the 1960's-1970's.

- *"The APP requires that monitoring frequency of P49-O be increased to monthly for the quarterly indicator parameters. Based on the analysis provided, we are requesting to resume quarterly monitoring for both well P49-O and M1-GL".*

In addition to denying Curis request that the requirement for monthly monitoring be waived, it is our opinion that further investigation, in addition to the monthly monitoring, be performed to identify the source of the elevated concentrations of sulfate, magnesium, and TDS.

ATTACHMENT 1

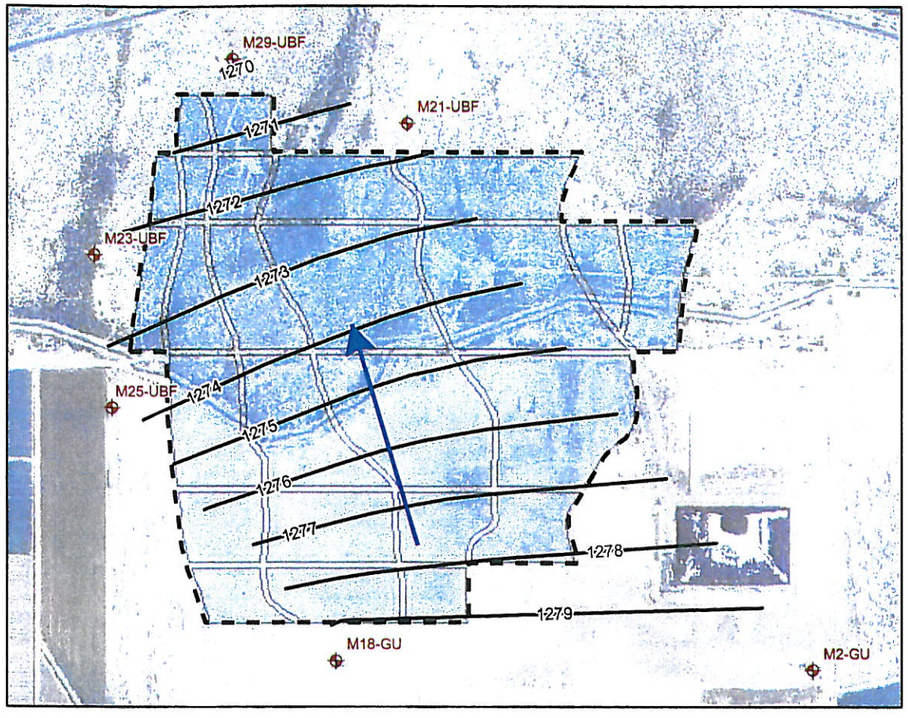
Ambient Laboratory Data (P49-O)

Table 1. Alert Levels for Common Ions and pH

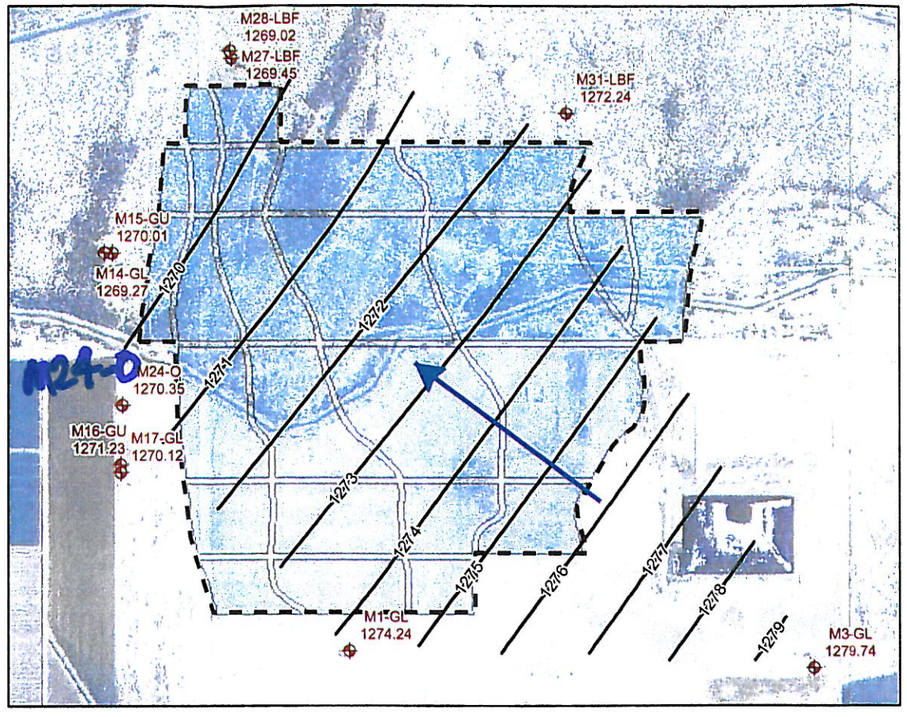
Well	P49-O				
Analyte	Mg	SO_4	F	TDS	pH
(units)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(S.U.)
Sample Date					
Jun-95					
Jul-95					
Aug-95					
Sep-95					
Oct-95					
Nov-95					
Dec-95					
Jan-96	3.8*	120*	0.29*	510*	6.8*
Feb-96	4.1*	110*	0.83*	490*	7.3
Mar-96	3.8*	110*	0.99*	480*	7.3
Apr-96	3.6*	100*	1.1*	500*	7.2
May-96	3.8	110	1.1	500	7.4
Jun-96	3.6	110	0.85	490	7.6
Jul-96	3.7	110	1.0	460	7.4
Aug-96	3.8	110	0.88	480	7.7
Sep-96	3.7	110	1.0	500	7.7
Oct-96	3.3	110	1.0	480	7.7
Nov-96	3.5	100	0.91	470	7.7
Dec-96	3.4	100	1.0	480	7.8
Jan-97					
Feb-97					
Mar-97	3.4	98	1.3	470	7.7
Apr-97					
May-97					
Jun-97					
Jul-97					
Aug-97					
Nov-97	3.6	100	0.73	460	
Dec-97					
Jan-98	3.3	98	0.76	460	
Mar-98					
Apr-98	3.7	71	0.86	411	
May-98					
Mean	3.57	102	0.949	472	7.54
Standard Deviation	0.183	11.2	0.155	23.8	0.207
Coefficient of Variation	0.0512	0.110	0.163	0.0505	0.0274
Level I					
Alert Level (upper)	4.6	168	1.9	610	
Adjusted AL (upper)	5.6			746	
Level II					
Alert Level (upper)	4.9	184	2.1	646	9.2
Adjusted AL (upper)	6.2			816	
Alert Level (lower)					5.9

ATTACHMENT 2

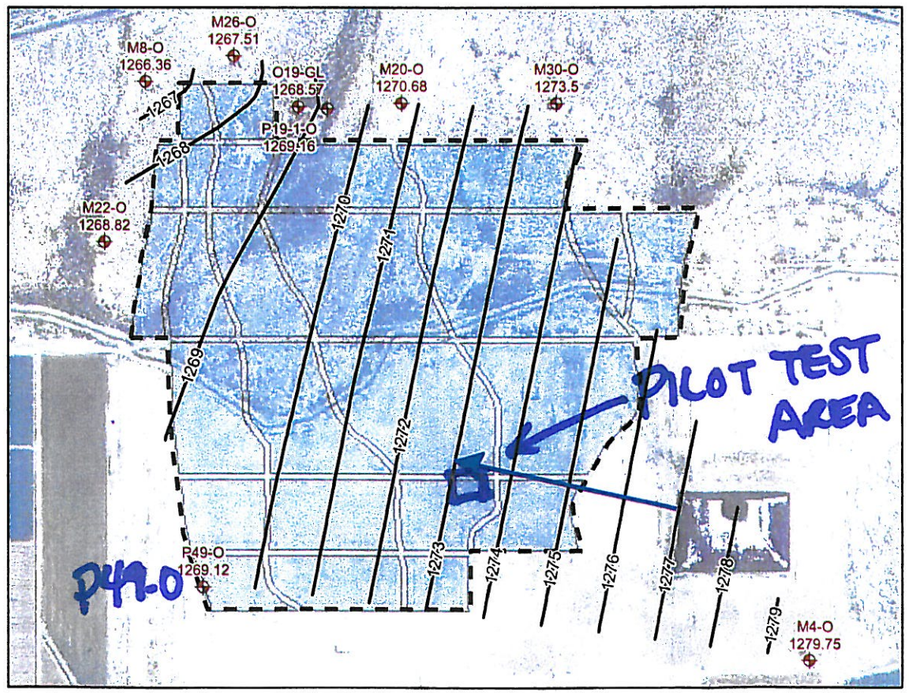
Contour map



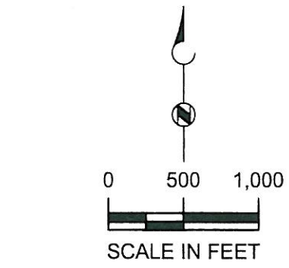
UPPER BASIN FILL UNIT



LOWER BASIN FILL UNIT



OXIDE ZONE



EXPLANATION

- WATER LEVEL DATA POINT
- GROUNDWATER ELEVATION CONTOUR
- MINE AREA
- MINE BLOCK
- GROUNDWATER FLOW DIRECTION

Brown AND Caldwell

Figure 2
OCTOBER 2008 GROUNDWATER ELEVATIONS

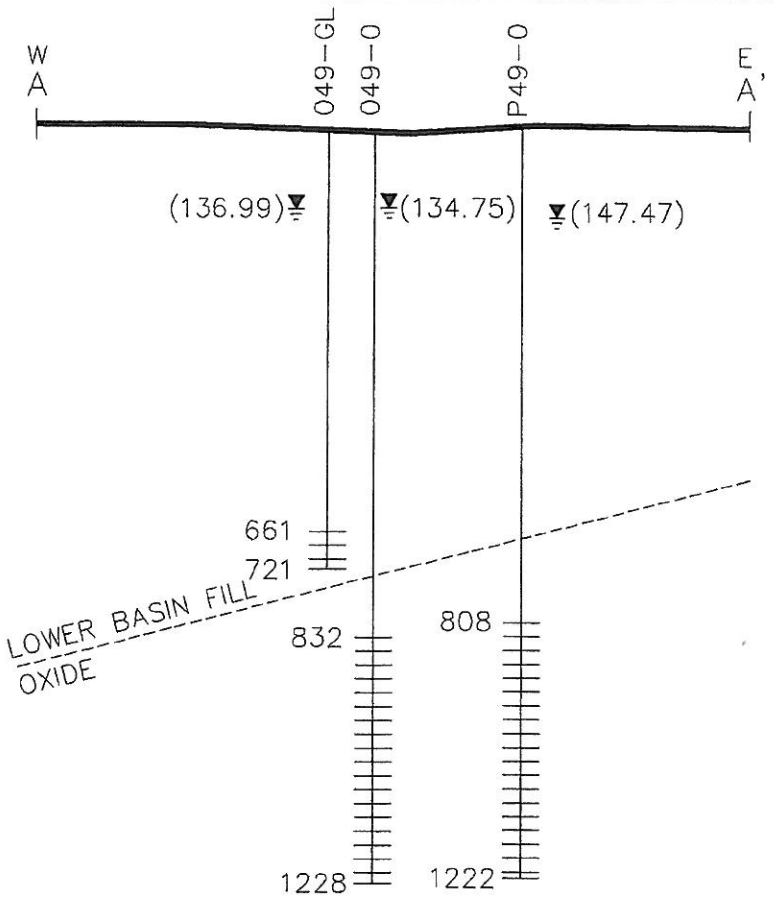
CURIS RESOURCES (ARIZONA) INC.
FLORENCE, ARIZONA

P:\Hunter Dickinson\Curis GIS\MXDs\G138799008.mxd 5/18/2010

ATTACHMENT 3

P49-O Well Information

Vol II of V Site Characterization Report JAN 1996



SIMPLIFIED EAST-WEST CROSS SECTION

Approximate Scale: Vertical : 1"= 300'
Horizontal: 1"= 150'

EXPLANATION

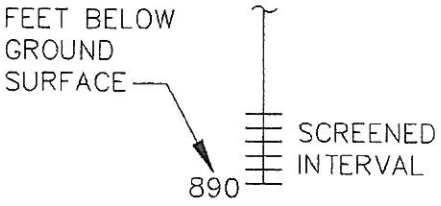
POTENTIOMETRIC SURFACE	(151.00)
(SHOWN IN FEET BELOW GROUND SURFACE)	

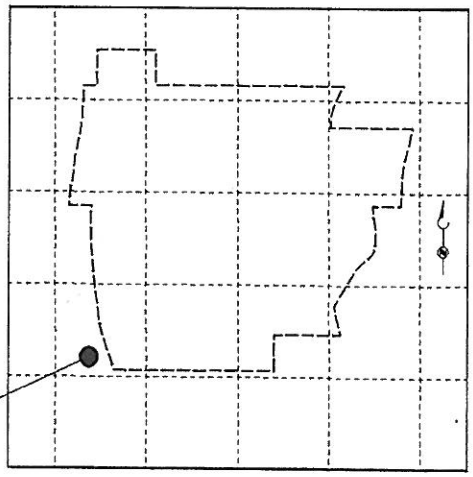
WELL PREFIXES

PUMPED WELL	P
MONITOR WELL	M
OBSERVATION WELL	O

WELL SUFFIXES (AQUIFER COMPONENT SCREEN)

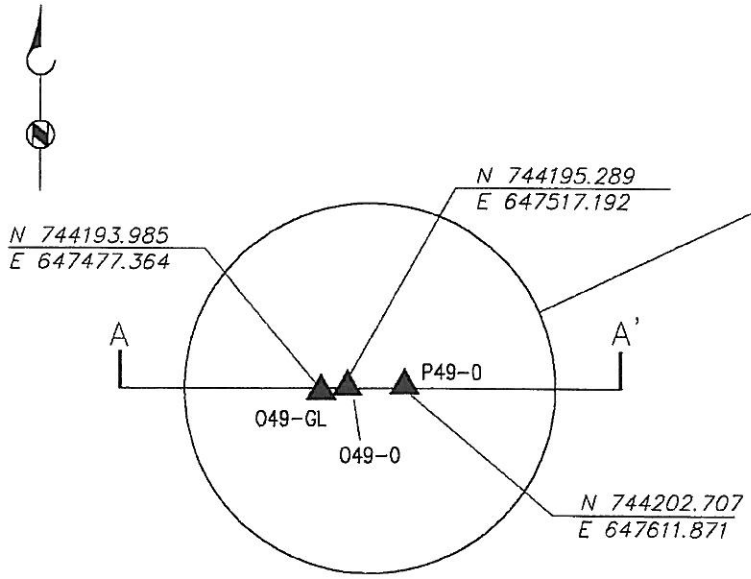
BASIN FILL	GU
BASIN FILL	GL
OXIDE BEDROCK	O
SULFIDE BEDROCK	S





WELL LOCATION MAP

Approximate Scale: 1"= 2000'



WELL PLAN VIEW

Approximate Scale: 1"= 300'

Figure E-10 (II)
LOCATION SUMMARY
AQUIFER TEST
CLUSTER 49

BROWN AND CALDWELL

MAGMA COPPER COMPANY
Florence, Arizona

E-10_2 12-01-95 DonH

Table B-4. Summary of Information Concerning Existing Wells Within One-Half Mile of the Florence In-Situ Mine Area

Well ID*	Well Correlation Tables[a]	Well Type	Location/ ADWR No.**	Location Coordinates (Northing Easting)	Land Elevation (feet)[b]	Reference Point Elevation (feet)[b]	Total Depth (feet)[c]	Casing Diameter	Screened Interval (feet)[c]	Screened Zone	Top of Bedrock (feet)[c]	Date Installed	Well Owner	Condition/Remarks
O28.1-O	B1	Monitor	D(4-9)28ddb 55-547803	745652.04N 651027.87E	1464.6	1465.76	530	4";0-514	395-494	O	368	6-21-95	Magma	1.5-foot LCS casing stickup. Aquifer test performed 8/95, 9/95.
O28.2-S	B1	Monitor	D(4-9)28ddb 55-547804	745621.06N 651123.95E	1464.8	1465.54	510	4";0-495	454-494	S	340	6-19-95	Magma	1.5-foot LCS casing stickup. Aquifer test performed 8/95, 9/95.
P28-GL	B1	Test	D(4-9)28ddb 55-547807	745535.76N 651085.74E	1465	1466.48	320	5";0-309	279-309	G	NA	6-30-95	Magma	1.5-foot LCS casing stickup. Aquifer test performed 8/95, 9/95.
P28.1-O	B1	Test	D(4-9)28ddb 55-547802	745558.54N 650998.31E	1464.9	1466.48	520	6";0-509	399-499	O	360	7-2-95	Magma	1.5-foot LCS casing stickup. Aquifer test performed 8/95, 9/95.
P28.2-O	B1	Test	D(4-9)28ddb 55-547806	745516.17N 651118.23E	1465.4	1466.68	519	6";0-507	398-497	O	335	6-29-95	Magma	1.5-foot LCS casing stickup. Aquifer test performed 8/95, 9/95.
O39-O	B1	Monitor	D(4-9)28bcd 55-549174	744220.52N 649098.12E	1463.1	1464.29	916	5";0-910	474-890	O	380	5-7-95	Magma	1.6-foot LCS casing stickup. Aquifer test performed 5/95.
P39-O	B1	Test	D(4-9)28bcd 55-549176	744102.51N 649102.65E	1461.7	1462.85	915	6";0-847	471-826	O	380	5-10-95	Magma	2.0-foot PVC casing stickup. Aquifer test performed 5/95.
O49-O	B1	Monitor	D(4-9)33bba 549179	744195.29N 647517.19E	1461.8	1462.69	1280	4";0-1247	832-1227.5	O	810	6-6-95	Magma	1-foot PVC casing stickup.
O49-GL	B1	Monitor	D(4-9)33bba 55-549180	744193.98N 647477.36E	1461.2	1462.08	740	5";0-730	661-721	G	NA	6-15-95	Magma	1.1-foot PVC casing stickup.
P49-O	B1	Test	D(4-9)33bba 55-549181	744202.71N 647611.87E	1461.8	1463.12	1288	6";0-1242.5	808-1222	O	770	5-24-95	Magma	.9-foot LCS casing stickup.

[a]The following are other tables which correlate with wells listed in the table.
- C1, C2: Existing water quality data, Appendix C, Volume II
- B1, B2, B3: Water level data, Appendix B, Volume II
- B5, Well data included in Montgomery and Associates (1994)

[b]Feet above mean sea level (MSL)

[c]Feet below ground surface

* The well ID listed first identifies the well name most commonly used with respect to documentation and well recognition. Any other names found for a particular well are also listed as a reference.

** The correct well identification is based on location and is listed first followed by all other numbers referenced to that well as found in various reports and documents.

Table B-1. Summary of Current Investigation Water Level Data								
Well Location	Well ID	Northing/ Easting	Surface Elevation (feet)a	Measuring Point Elevation (feet)a	Well Depth (feet)b	Depth to Water (feet)b	Water Elevation (feet)a	Date Measured
						114.44	1,342.16	October 05, 1995
						110.80	1,345.80	November 08, 1995
						109.47	1,347.13	December 11, 1996
D(4-9)33bac	M1-GL	743799.85/ 648550.02	1,461.10	1,462.40	365.00	135.99	1,327.05	July 01, 1995
						135.38	1,327.66	August 01, 1995
						128.89	1,334.15	September 05, 1995
						125.28	1,337.76	October 05, 1995
						119.40	1,343.64	November 08, 1995
						110.47	1,351.93	December 11, 1996
D(4-9)33bac	M18-GU	743800.82/ 648501.52	1,461.00	1,461.75	227.60	117.33	1,345.22	July 01, 1995
						135.90	1,326.65	August 01, 1995
						120.29	1,342.26	September 05, 1995
						118.00	1,344.55	October 05, 1995
						115.47	1,347.08	November 08, 1995
						107.90	1,353.85	December 11, 1996
D(4-9)33bba	O49-GL	744193.99/ 647477.36	1,461.20	1,462.08	730.42	152.20	1,309.88	August 01, 1995
						136.99	1,325.09	September 05, 1995
						140.25	1,321.83	October 05, 1995
						124.34	1,337.74	November 08, 1995
						123.03	1,339.05	December 11, 1996
D(4-9)33bba	O49-O	744195.29/ 647517.19	1,461.80	1,462.69	1,247.30	147.15	1,315.54	August 01, 1995
						134.75	1,327.94	September 05, 1995
						131.60	1,331.09	October 05, 1995
						124.17	1,338.52	November 08, 1995
						121.00	1,341.69	December 11, 1996
D(4-9)33bba	P49-O	744202.71/ 647611.87	1,461.80	1,463.12	1,242.51	147.47	1,315.65	August 01, 1995
						135.00	1,328.12	September 05, 1995

See Sheets 1.2-1(II) and 1.2-2(II) for well locations, and Appendix B (II) for additional well information.

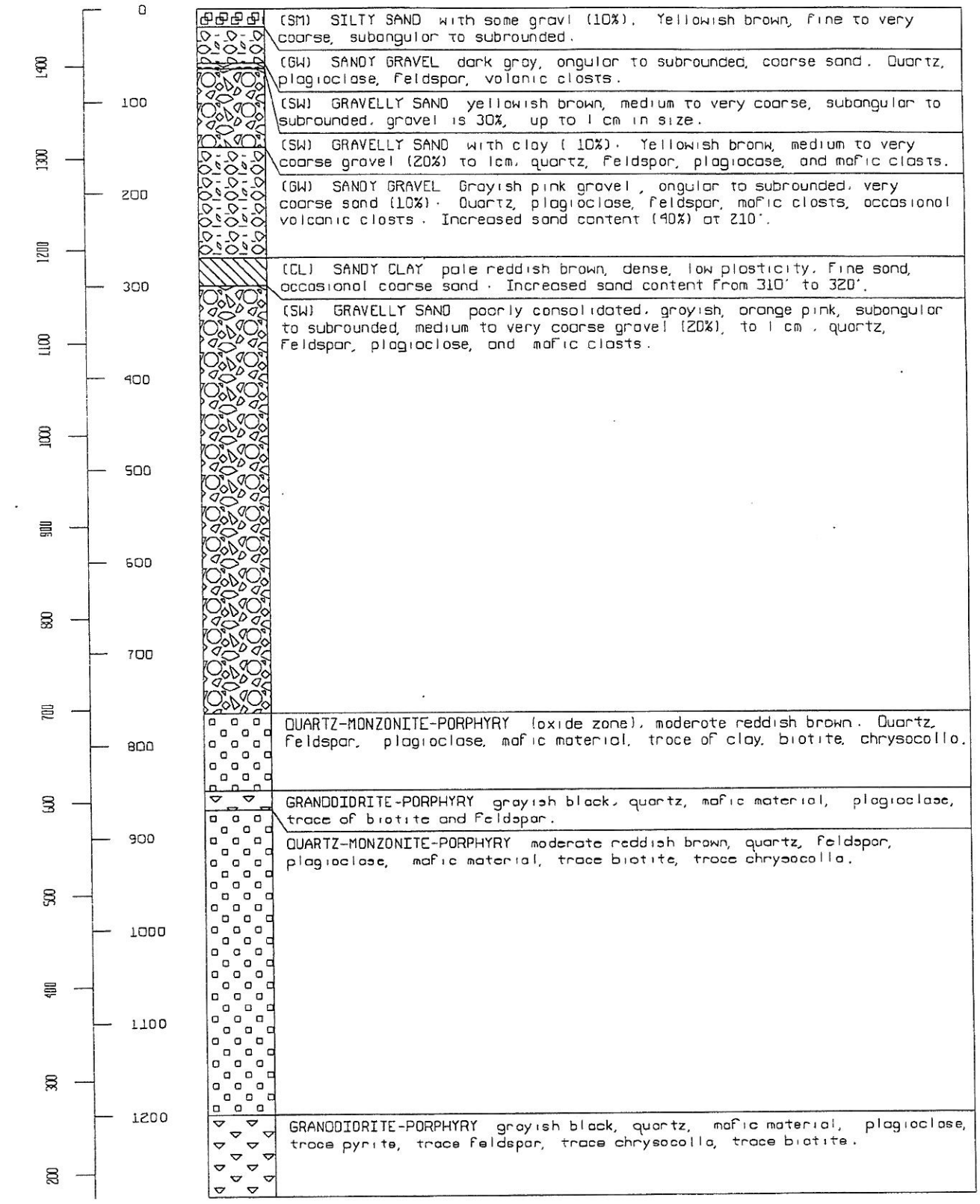
[a]Feet above mean sea level (msl)

[b]Feet below ground surface (bgs)

Well P49-0

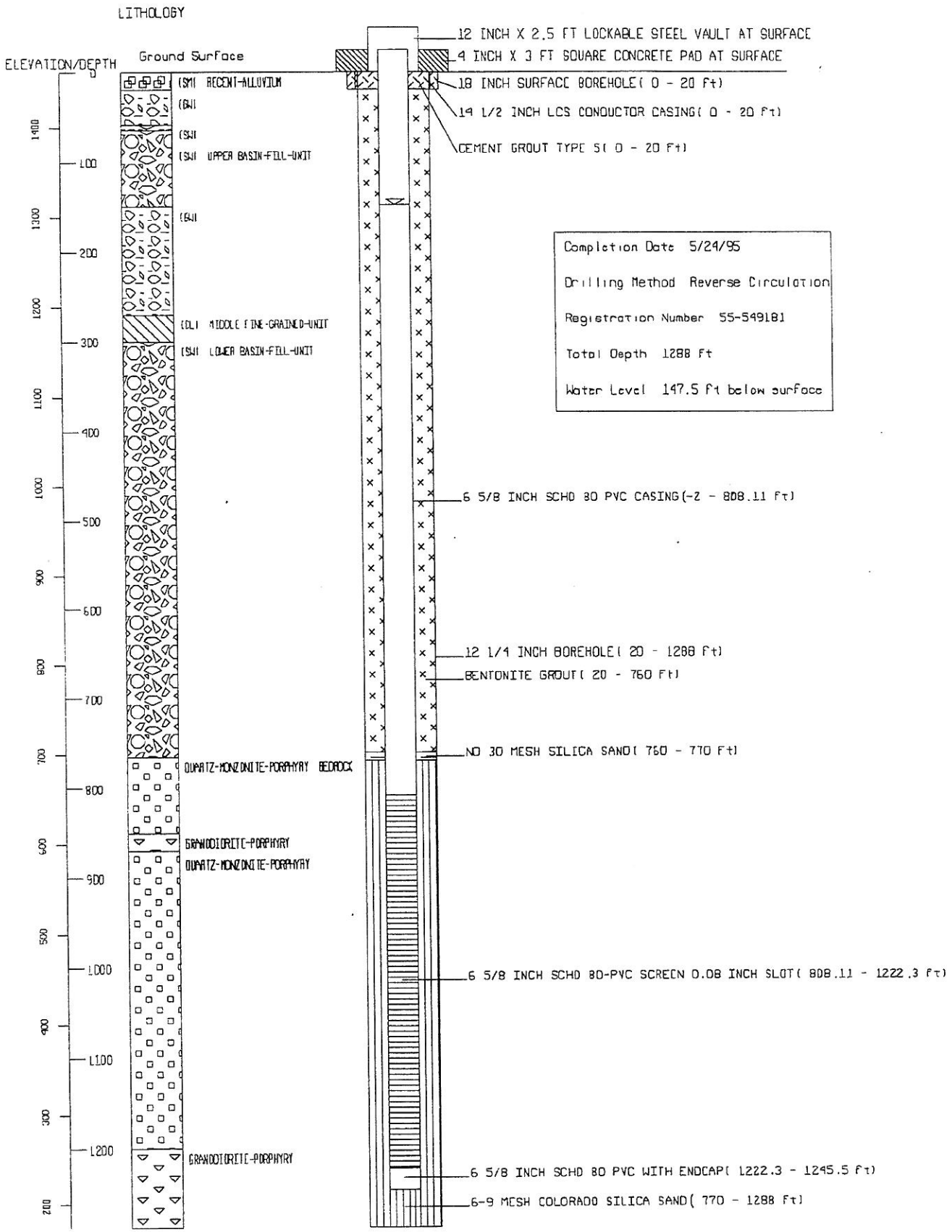
DATE DRILLED 5/19/95 TO 5/29/95
TOTAL DEPTH 1288 Feet below ground surface
DRILLING METHOD Reverse Circulation
BORING DIAMETER 12 1/4 inches
NORTHING / EASTING 744202.707 / 647611.871
SURFACE ELEVATION 1461.8 Feet
WATER LEVEL 197.5 Feet below ground surface

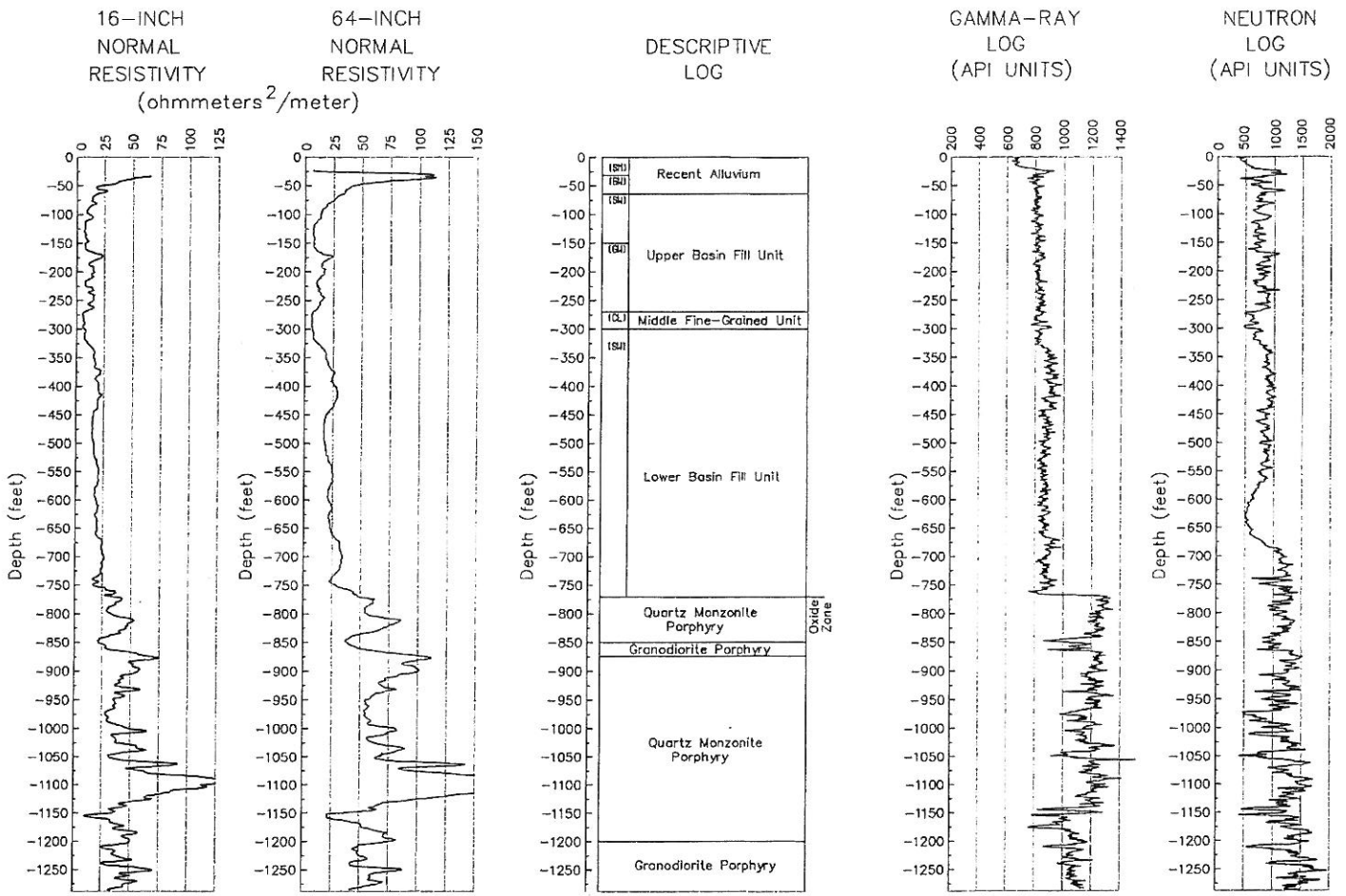
NOTE Classifications given are based on Unified Soil Classification System



Well P43-0

WELL CONSTRUCTION DETAILS (dimensions exaggerated above ground surface)





p49.dwg 12/20/95 GJC

BROWN AND CALDWELL

RESISTIVITY, GAMMA-RAY AND NEUTRON LOGS FOR BOREHOLE P49-O

MAGMA COPPER COMPANY
Florence, Arizona